Message

From: Trumble, Luke (EGLE) [TrumbleL@michigan.gov]
Sent: 4/29/2019 6:18:57 PM
To: Pelloso, Elizabeth [Pelloso.Elizabeth@epa.gov]
Subject: FW: Grand River Revitalization - Hydraulic Modeling Meeting Follow-up

FYI

Lucas A. Trumble, P.E.
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From: Trumble, Luke (DEQ)
Sent: Monday, February 25, 2019 3:03 PM
To: 'Staal, Michael' <mstaal@grand-rapids.mi.us>
Cc: Saldivia, Luis (DEQ) <SALDIVIAL@michigan.gov>; Occhipinti, Matthew (DEQ) <OCCHIPINTIM@michigan.gov>; Smalligan, James <jesmalligan@ftch.com>; Soltys, Peter W. <pwsoltys@ftch.com>
Subject: RE: Grand River Revitalization - Hydraulic Modeling Meeting Follow-up

Michael,

Your email raises concerns over the ongoing communications regarding appropriate modeling parameters for the proposed GRWW project. This email will constitute the third written communication in which DEQ has identified inconsistencies in references to our November and December conversations which centered around a previous version of the draft model and hydraulic report. At that time, the proposed conditions model utilized of a vertical variation of Manning's roughness coefficient (n-values). Based in part on our November 27th phone conversation, GRWW has elected to utilize only horizontal variations of n-values, consistent with the methodology used in the existing conditions model. At no time during those conversations, did DEQ instruct GRWW to utilize any specific n-values for the proposed fills. Continued reference to conversations about vertical variation of n-values is not appropriate and irrelevant to currently proposed modeling technique.

As for n-values suggested in our February 1st email below, a December 19th email from GRWW contained a technical memo prepared by River Restoration (RRO) dated December 18th. That memo outlined proposed n-values for the various fill materials associated with the project. Page 2 of that memo includes references to several documents used to develop the n-values in the proposed conditions model, asserting that these values are conservative based on the recommendations of these references and current engineering practice. DEQ has reviewed each of the referenced documents and found that the n-values proposed in the RRO memo are not conservative per the recommendations of the documents. The n-values suggested in our February 1st email were intended to be conservative yet representative of the proposed fill materials per the referenced literature and draft project plans provided to DEQ.

It is the DEQ's responsibility under the Floodplain Authority found in Part 31, Water Resources Protection, to identify any potential increases in flood stages resulting from projects such as the proposed GRWW project. It is our contention that conservative, yet representative n-values should be utilized in the proposed conditions model such that the proposed fill material is adequately characterized and any resulting increases to flood stages are captured by the model. Underestimating channel roughness has the potential to underestimate resultant rises in flood stages and would not be representative of potential project impacts. Underestimating flooding impacts in the Grand Rapids area could have severe consequences.

To your last point, it is our understanding that the US Army Corps of Engineers Detroit District will be reviewing hydraulic models for the project under the NEPA process. We look forward to continued discussions with GRWW, USACE, and others related to hydraulic modeling for the project. Feel free to reach out to discuss these or other issues in the meantime.

Thank you,
Luke

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From: Staal, Michael <mstaal@grand-rapids.mi.us>
Sent: Friday, February 15, 2019 2:20 PM
To: Trumble, Luke (DEQ) <TrumbleL@michigan.gov>
Cc: Saldivia, Luis (DEQ) <SALDIVIAL@michigan.gov>; Occhipinti, Matthew (DEQ) <OCCHIPINTIM@michigan.gov>; Smalligan, James <jesmalligan@ftch.com>; Soltys, Peter W. <pwsoltys@ftch.com>
Subject: RE: Grand River Revitalization - Hydraulic Modeling Meeting Follow-up

Luke,
Thank you for your help on the modeling topics and with your work on the AHS technical work group. It is really good to have you on the team. Jim and I had a question about your last e-mail and we were hoping you could help us better understand.

The Manning's N values that RRO used in their last memo were values apparently taken from an e-mail you sent on December 11, 2018. The Manning's N values for native alluvium and boulders in the last e-mail you sent in January (0.05 to 0.06 and 0.08, respectively) appear to conflict with the values you sent in the December e-mail (0.045 to 0.05 for 1.5' boulders and 0.02 minimum difference between gravel and boulders) and we were wondering if you could help us better understand why there was a difference in Manning's values. Could you please clarify why there was a difference in those values?

When we asked River Restoration to plug those values into the models, there is a small rise in the WSE, but the problem is that the WSE rise puts us above the current, existing WSE. And that puts the project at risk for harmful interference. I have attached the graphs that show the difference in WSE between the December Manning's and the January Manning's values for both the 1979 model and the 2017 model.

Peter Soltys, a hydraulic modeler from FTCH, looked through the values provided in the last January e-mail, and he looked through over 30 professional publications and could not find any research that validated these higher values. So Jim and I were thinking that we may have interpreted your January e-mail incorrectly.

We brought up this topic to the AHS technical work group on Tuesday, and the suggested path forward was to have a meeting with you, me, Jim, GRWW, RRO, Patrick from MDNR, and ERDC. It was suggested that maybe ERDC could come in as a third party expert to weigh in. Before we go down that route, Jim and I thought it would be good to clarify that we fully understand what your January e-mail said.

Thanks again for all your help and input in this project. It has been valuable to have you as part of the project team, and we look forward to continue working with you on this project.

Best,

Mike

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From: Trumble, Luke (DEQ) <TrumbleL@michigan.gov>
Sent: Friday, February 1, 2019 9:22 AM
To: Staal, Michael <mstaal@grand-rapids.mi.us>; Saldivia, Luis (DEQ) <SALDIVIAL@michigan.gov>; Occhipinti, Matthew (DEQ) <OCCHIPINTIM@michigan.gov>; Patin, Jacob (DEQ) <PatinJ1@michigan.gov>
Cc: Steffen, Jay <jsteffen@grand-rapids.mi.us>; Richard Bishop <richard@grandrapidswhitewater.org>; Matt Chapman <matt@grandrapidswhitewater.org>; Smalligan, James <jesmalligan@ftch.com>; Soltys, Peter W. <pwsoltys@ftch.com>; Jason Carey <jason.carey@riverrestoration.org>; Quinn Donnelly <quinn.donnelly@riverrestoration.org>; Scott Prins <scott.prins@riverrestoration.org>; Michael Scurlock <michael.scurlock@riverrestoration.org>
Subject: RE: Grand River Revitalization - Hydraulic Modeling Meeting Follow-up

Good morning all:

We are finally back in the office today after winter weather office closures and wanted to respond to this email and subsequent inquiries from the GRWW group. FYI, WRD staff have had a chance to review the December 19, 2018 email and attached documents and have the following comments/concerns:

1. Per a 12/28/18 email from Luke Trumble, WRD did not instruct GRWW to utilize a blanket 0.02 increase in Manning's roughness coefficient (n-values) for characterizing increased bed roughness from the existing to proposed conditions.
2. Table 2.2 of the 12/12/18 River Restoration Tech Memo suggests the following ranges for n-values for the proposed conditions model:
    a. Boulder 0.045 – 0.050
    b. Coarse Cobble 0.040
    c. Cobble and Gravel 0.030 – 0.035
    d. Concrete 0.016
    e. River bottom outside areas of disturbance 0.028 – 0.034
    f. River Banks 0.045 – 0.100
    g. Overbanks and floodplain 0.045 - 0.100
3. Riverbanks, overbanks, and floodplains that are to remain unchanged as part of the project utilize the same n-values as the existing conditions model. This is appropriate.
4. The 12/12/18 Tech Memo goes on to state the following:
   "The Manning's n values listed in Tables 2.1 and 2.2 are conservative for flood plain determination compared to engineering standards and other literature sources including Chow (1959), Acrement (1989), Barnes (1967), Phillips (1998), Brunner (2016) and Jarrett (1985)."
5. WRD staff have reviewed all references listed in the Tech Memo, and determined that the values suggested for coarse cobble and boulder fill are not conservative and would not be representative of the increased channel roughness associated with the proposed coarse fill material.
6. WRD's review of these documents indicate that conservative n-values for the 12-18 inch alluvium fill and 3-foot minimum diameter boulders as proposed in the project plans would be 0.05 to 0.06 and 0.08, respectively. N-

values for other proposed fills like riprap substructure, boulder gardens, etc., should be appropriate for the material gradation and relative roughness, in accordance with the referenced materials.

7. The proposed conditions model should be re-run utilizing these conservative values where coarse fill is proposed in order to provide an estimate of impacts associated with this fill.
8. Item #12 of the 11/27/18 Meeting Notes indicates that further discussions regarding the property owner acknowledgement of any changes in flood stages is necessary. WRD would like to reiterate that notification of adjacent owners will be necessary if any increases in flood profiles affect their property, whether or not those increases constitute a harmful interference under Part 31. Notification to affected property owners may be achieved through the standard affected property owner statement and possibly through language included in the easement, but this would require further discussion and approval from WRD management.

Please let us know if you have any questions or concerns.

Thanks,
Luke

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From: Staal, Michael <mstaal@grand-rapids.mi.us>
Sent: Wednesday, December 19, 2018 12:51 PM
To: Saldivia, Luis (DEQ) <SALDIVIAL@michigan.gov>; Occhipinti, Matthew (DEQ) <OCCHIPINTIM@michigan.gov>; Trumble, Luke (DEQ) <TrumbleL@michigan.gov>; Patin, Jacob (DEQ) <PatinJ1@michigan.gov>
Cc: Steffen, Jay <jsteffen@grand-rapids.mi.us>; Richard Bishop <richard@grandrapidswhitewater.org>; Matt Chapman <matt@grandrapidswhitewater.org>; Smalligan, James <jesmalligan@ftch.com>; Soltys, Peter W. <pwsoltys@ftch.com>; Jason Carey <jason.carey@riverrestoration.org>; Quinn Donnelly <quinn.donnelly@riverrestoration.org>; Scott Prins <scott.prins@riverrestoration.org>; Michael Scurlock <michael.scurlock@riverrestoration.org>
Subject: Grand River Revitalization - Hydraulic Modeling Meeting Follow-up
Importance: High

Good afternoon Luis,
I hope this e-mail finds you well as we enter this holiday season. Attached to this e-mail is the follow-up we promised from our hydraulic modeling conference call on November 27, including the 11/27 meeting notes, a memo from River Restoration Org on the changes made to the Manning's N coefficients, and a letter from FTCH who reviewed the modeling.

Would you and your team please look over the attached documents? I believe the changes we made are consistent with our discussion on 11/27, and I would like to make sure that our changes with the Manning's Coefficients are in agreement with your understanding of that discussion too. Your feedback on these documents would be greatly appreciated. Once we know our changes are in agreement with what we talked about, we will ensure the other modelling reports get updated as well, including the Modelling QA/QC Memo that Luke has seen and may have distributed.

Please let me know if you have any questions or concerns. Our team is available to discuss any outstanding items that may not have been addressed.

Thanks again for your time at our meeting and taking the time to make sure our understandings are in agreement. I hope everyone has a great holiday season.

Best,

Mike

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